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IS 4009-2 (1981): Grease Nipples, Part II: Conical Head
Grease Nipples [PGD 19: Lubricating Equipments]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard



SPECIFICATION FOR GREASE NIPPLES

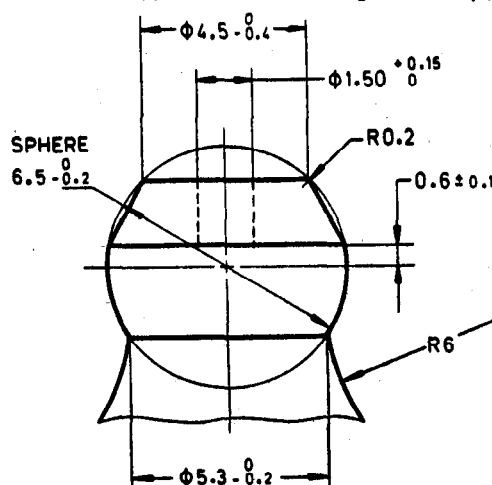
PART II CONICAL HEAD GREASE NIPPLES

(First Revision)

1. Scope — Covers the requirements of conical head grease nipples used in industrial plants and automobiles.

2. Dimensions

2.1 The details of the conical head for Types A, B and C grease nipples shall be as shown below:



2.2 The dimensions of Types A, B, C and D grease nipples shall be as given in Table 1.

3. Material — Shall conform to the following:

Steel conforming to property class 4.8 of IS : 1367-1967 'Technical supply conditions for threaded fasteners (first revision)'.

4. Designation — A Type B conical head grease nipple of nominal size M 10 × 1 shall be designated as:

Conical Head Grease Nipple B M10 × 1 IS : 4009 (Part II)

5. General Requirements

5.1 The grease nipple shall be finished smooth and shall be free from burrs, cracks and other manufacturing defects.

5.2 Nipples shall be plated with either zinc or cadmium.

5.3 The ball/poppet shall protrude from the top surface of the nipple body.

5.4 The head of the nipples shall be hardened to a minimum hardness of 500 HV.

5.5 The shank portion of nipples shall have threads conforming to IS : 8788-1978 'Metric external taper and internal parallel screw threads' (except gauge plane).

5.6 The angular portion of the Types B and C grease nipples shall be fitted to the main body by means of thread conforming to IS : 4218 'ISO metric screw threads'.

TABLE 1 DIMENSIONS FOR CONICAL HEAD GREASE NIPPLES

(Clause 2.2)

All dimensions in millimetres.

Type	Figure	Nominal Size d	h Max	l Approx	Width Across Flats s h_{13}
A		M6 M8 × 1 M10 × 1 M16 × 1.5	16 17 18 23.5	— — — —	7 9 11 17
B		M6 M8 × 1 M10 × 1 M16 × 1.5	— — — —	10 10 11 14	9 9 11 17
*Chamfered down to the minor thread diameter.					

(Continued)

TABLE 1 DIMENSIONS FOR CONICAL HEAD GREASE NIPPLES — *Contd*

Type	Figure	Nominal Size d	h Max	l Approx	Width Across Flats s h_{13}
C		M6	—	14.3	9
		M8 x 1	—	14.3	9
		M10 x 1	—	15.3	11
		M16 x 1.5	—	18.3	17
D		M6	15	—	8
*Chamfered down to the minor thread diameter.					
Note — The body of conical head grease nipples B and C may have square or hexagonal cross-sections (width across flats) as agreed to between the purchaser and the supplier and Type B nipples may also have round shapes above 3 mm length of hexagonal cross-section.					

6. Tests

6.1 Flow Tests — The oil shall flow smoothly and the valve shall function normally when the lubricating oil is forced into nipple at a pressure of not more than 2 MPa (20.4 kgf/cm²). Under these conditions there shall not be any abnormality caused in the function of ball/poppet and the other components.

6.1.1 The ball/poppet shall not move axially under a force of 30 N.

6.2 Pressure Tightness — When the lubricating oil is forced into the nipple from the fitting side under a pressure of 3.5 MPa (35.7 kgf/cm²) there shall not be any leakage or other abnormality.

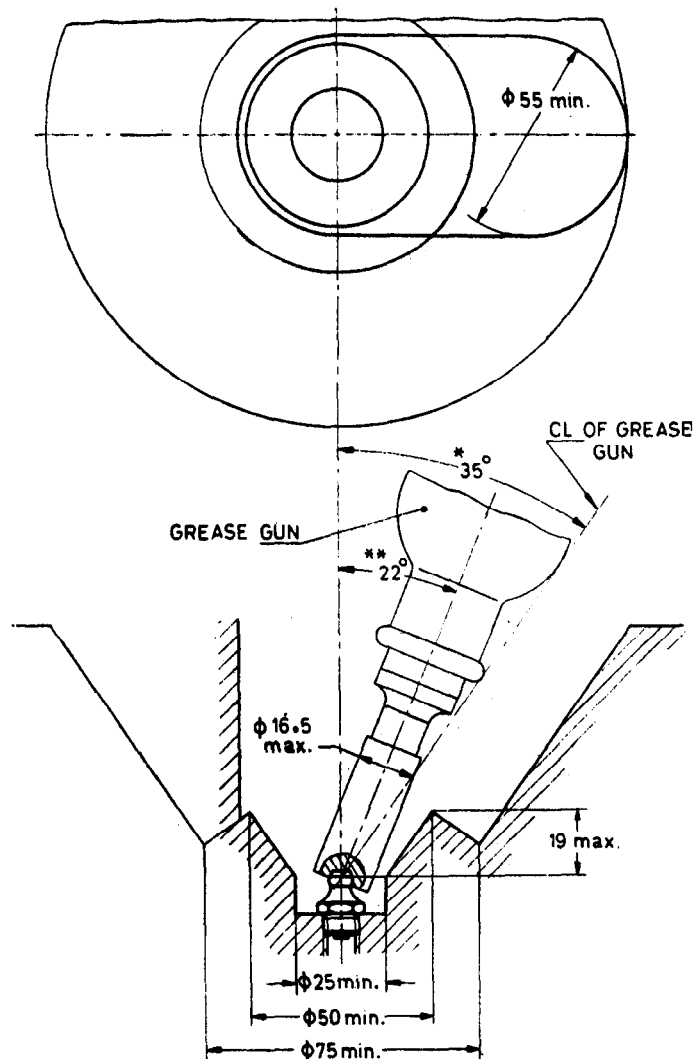
7. Marking — The nipple shall be marked with nominal size and the manufacturer's name or identification mark.

7.1 ISI Certification Mark — Details available with the Indian Standards Institution.

8. Packing — Shall be packed in accordance with the best trade practice or as specified by the purchaser.

9. Sampling — Unless otherwise agreed upon the sampling plan given in Appendix A shall be followed.

10. Space for Service Tools — The recommended dimensions for the space required for easy connection and detachment of service tools, such as grease guns (whether hand held or power operated) shall be as shown in Fig.1 for Types A, B and C, and Fig. 2 for Type D grease nipples.



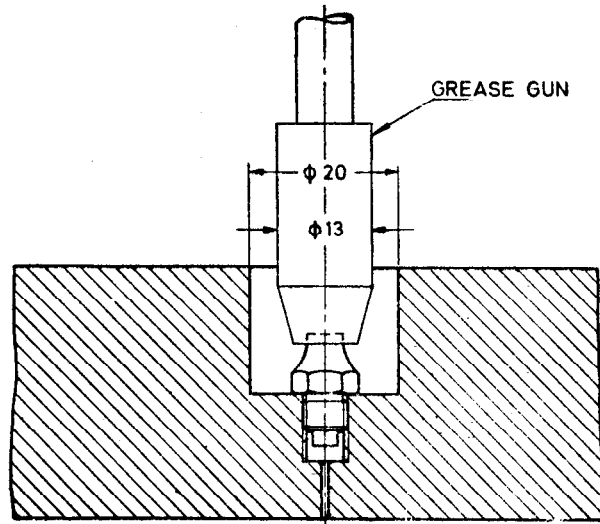
*Minimum angle for disengaging.

**Maximum angle for servicing.

Note — To ensure satisfactory servicing with all the usual types of grease guns, the space shown by the thick lines and hatched shall be kept clear at some point within the cone bounded by the long dash and dot lines.

All dimensions in millimetres.

FIG. 1 SPACE REQUIRED FOR SERVICE TOOLS FOR TYPES A, B AND C GREASE NIPPLES



All dimensions in millimetres.

FIG. 2 SPACE REQUIRED FOR SERVICE TOOLS FOR TYPE D GREASE NIPPLES

APPENDIX A

(Clause 9)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

A-1. Scale of Sampling

A-1.1 Lot — In any consignment, all the grease nipples belonging to the same material, type and size, and manufactured under similar processes of production shall constitute a lot.

A-1.2 Grease nipples shall be selected and examined for each lot separately for ascertaining their conformity to the requirements of the specification.

A-1.3 The number of grease nipples to be selected at random from a lot shall depend upon the size of the lot in accordance with col 1 and 2 of Table 2. To ensure randomness of selection IS : 4905-1968 'Methods for random sampling' shall be followed.

TABLE 2 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

(Clauses A-1.3, A-1.4, A-2.1 and A-2.2)

Lot Size (1)	For Workmanship and Finish		For Dimensional Characteristics	
	Sample Size (2)	Permissible Number of Defectives* (3)	Sub-sample Size (4)	Permissible Number of Defectives† (5)
Up to 300	20	1	8	0
301 to 500	32	2	13	0
501 to 1 000	50	3	20	0
1 001 to 3 000	80	5	32	1
3 001 to 10 000	125	7	50	1
10 001 and above	200	10	80	2

*This ensures that lots containing only 2.5 percent or less defectives will be accepted most of the times.

†This ensures that lots containing only one percent or less defectives will be accepted most of the times.

IS : 4009 (Part II) - 1981

A-1.4 If the grease nipples in the lot are packed in different bags or cases, a suitable number of bags or cases (not less than 20 percent of the total in the lot subject to a minimum of 2) shall be chosen at random. From each of the bags or cases so chosen, an approximately equal number of grease nipples shall be picked up from its different parts so as to obtain the required number of grease nipples specified in col 2 of Table 2.

A-2. Criteria for Conformity

A-2.1 Workmanship and Finish — All the grease nipples drawn under **A-1.4** shall be examined for workmanship and finish in respect of its smoothness, burrs, cracks and other manufacturing defects. Grease nipples shall also be tested for the hardness of the head and the plating applied to the nipples. Any grease nipple failing to meet the requirements laid down in the respective clauses either in one or more of the cases shall be considered as defective. If the number of defective grease nipples found in the sample is less than or equal to the corresponding permissible number of defectives given in col 3 of Table 2, the lot shall be declared as conforming to workmanship and finish otherwise not.

A-2.2 Dimensional and Other Characteristics — The lot which has been found satisfactory with respect to workmanship and finish shall be examined for its dimensions, oil flow and pressure tightness. The number of grease nipples to be selected for this purpose shall be as given in col 4 of Table 2 which shall be taken at random from those and already drawn under col 2 and conforming to the requirements of **A-2.1**. If the number of grease nipples failing to meet it or more of the requirements laid down above is less than or equal to the corresponding permissible number of defectives given under col 5 of Table 2, the lot shall be declared as conforming to requirements of this clause otherwise not.

A-2.3 The lot shall be declared as conforming to the requirements of this specification if it has been found satisfactory according to **A-2.1** and **A-2.2**.

EXPLANATORY NOTE

This standard incorporates the requirements of both button head and conical head grease nipples, originally covered by IS : 4009-1967 'Grease nipples' and IS : 4974-1968 'Grease nipples, small' respectively. Part I deals with button head, while Part II deals with conical head grease nipples.

In this standard the test requirements for nipples have also been included.

In the preparation of this standard assistance has been derived from the following overseas standards:

DIN 3404-1969 Grease nipples with button head Deutsches Institut für Normung.

DIN 71412-1977 Grease nipples with conical head.